

LIVERMORE LAB REPORT

A weekly review of scientific and technological achievements from Lawrence Livermore National Laboratory, Nov. 28-Dec. 2, 2011.

The
New York
Times

LIVERMORE MAY FIND ITS PLACE ON THE PERIODIC TABLE



On Thursday, the International Union of Pure and Applied Chemistry (IUPAC) recommended proposed names for elements 114 and 116, the latest heavy elements to be added to the periodic table. And Livermore may very well get its own name on element 116.

Scientists of the Laboratory (LLNL)-Dubna collaboration proposed the names Flerovium for element 114 and Livermorium for element 116.

Livermorium (atomic symbol Lv) was chosen to honor Lawrence Livermore National Laboratory (LLNL) and the town of Livermore, Calif. A group of researchers from the Laboratory, along with scientists at the Flerov Laboratory of Nuclear Reactions, participated in the work carried out in Dubna on the synthesis of superheavy elements, including element 116. (Element 103 -- Lawrencium -- was already named for LLNL's founder E.O. Lawrence.)

To read more, go to the [New York Times](#).

Newsweek

SUPER SIZE ME



A newly installed rack for Dawn, which will help lay the foundation for the 20 petaFLOPS Sequoia system.

China may hold the lead in the supercomputing race, but don't cut out the United States just yet.

Bruce Goodwin, the weapons chief at the Laboratory, puts it more bluntly: "If we don't win this race," he says, "we're screwed. We're in a world of hurt."

The Laboratory is on its way to winning the race to build a faster and bigger supercomputer with the installation of Sequoia, which will be 20 petaFLOPS (a thousand trillion floating point operations per second) when it goes online in 2012.

To read more about the race, go to [Newsweek](#).



CURING THE ENERGY PROBLEM



Inside the National Ignition Facility

National Ignition Facility scientists are focusing the world's largest lasers on tiny pellets of tritium and deuterium, and the resulting reaction -- fusion energy -- produces forces that could be harnessed into a unique form of power.

As the Lab's director of laser fusion energy, Mike Dunne hopes to prove that fusion can eventually be a new source of clean, cheap and practically inexhaustible energy.

The process of tearing apart atoms and having them fuse together into new elements is re-creating the basic physics of how a star is powered by generating the enormous heat and pressure forces of the sun's core in a tiny cylinder in the NIF target chamber.

Dunne is not taking his eye off the ball even though 'ignition' (that is, producing more energy from the fusion process than it takes to create the process) could be the game changer for the world's energy supply.

To read more, go to [Canadian Business](#).

The
Washington
Post

ROVING TO MARS



The world's biggest extraterrestrial explorer, NASA's Curiosity rover, rocketed toward Mars last week on a search for evidence that the red planet might once have been home to itsy-bitsy life.

It will take 8½ months for Curiosity to reach Mars following a journey of 354 million miles.

With coordination from LLNL, one of the most comprehensive radiological emergency preparedness systems was on the ground to monitor the launch.

Dubbed Environmental Continuous Air Monitors, or ECAMs, the system monitored the air for the release of any radioactivity in the event of a launch accident involving the spacecraft.

To read more, go to the [Washington Post](#).

Bio-Medicine

TAKING AFTER A LEADER



Tom Guilderson

Laboratory Geochemist Tom Guilderson has been named a winner of the Department of Energy's prestigious Ernest Orlando Lawrence Award, Energy Secretary Steven Chu announced this week .

Guilderson is being honored for ground-breaking radiocarbon measurements of corals, advancements in understanding the paleo-history of ocean currents and ocean processes revealing past climate variability, and the explanation of how physical and biogeochemical oceanic processes affect the global carbon cycle.

Guilderson, 46, is the senior research scientist in the natural carbon research group at the Laboratory's Center for Accelerator Mass Spectrometry and a lecturer and researcher in the Department of Ocean Sciences and Institute of Marine Sciences at University of California, Santa Cruz.

The E.O. Lawrence Award -- named for the physicist who co-founded Lawrence Livermore National Laboratory -- comes with a citation signed by the Secretary of Energy, a gold medal bearing the likeness of Ernest Orlando Lawrence, and \$20,000. Guilderson will receive the official award at a ceremony later this year.

To read more, go to [Bio-Medicine](#).



ALL'S BRIGHT AT LLNL



Parney Albright

The Laboratory's 11th Director, Parney Albright, officially took the helm Thursday. Former Director George Miller is retiring after a 40-year career at LLNL.

Named in late October, Albright has more than 20 years of experience in the federal government and private sector.

Albright was selected after a nationwide search that began in June. Albright joined the Lab in 2009 as the principal associate director of Global Security, the Lab's program for applying science and technology to the nation's effort in counterterrorism, nonproliferation, defense, intelligence and energy needs.

For more about Albright, see his [bio](#).

LLNL applies and advances science and technology to help ensure national security and global stability. Through multi-disciplinary research and development, with particular expertise in high-energy-density physics, laser science, high-performance computing and science/engineering at the nanometer/subpicosecond scale, LLNL innovations improve security, meet energy and environmental needs and strengthen U.S. economic competitiveness. The Laboratory also partners with other research institutions, universities and industry to bring the full weight of the nation's science and technology community to bear on solving problems of national importance.

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